



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,660	02/25/2004	Michael Ioannou	03-IMP-028	2845
29393	7590	06/24/2005	EXAMINER	
ESCHWEILER & ASSOCIATES, LLC			JOHNSTON, PHILLIP A	
NATIONAL CITY BANK BUILDING				
629 EUCLID AVE., SUITE 1210			ART UNIT	PAPER NUMBER
CLEVELAND, OH 44114			2881	

DATE MAILED: 06/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/786,660	IOANNOU ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	Phillip A. Johnston	2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 25 February 2004.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-27 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 25 February 2004 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 9-16-2004, 2-25-2004
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_

**Detailed Action**

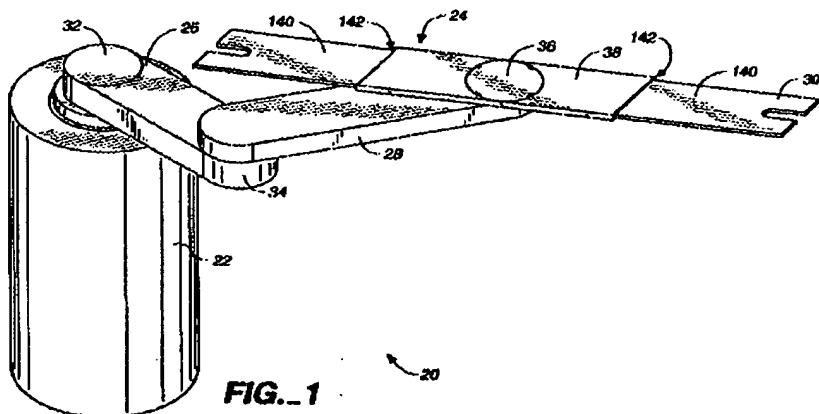
**Claims Rejection - 35 U.S. C. 102**

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

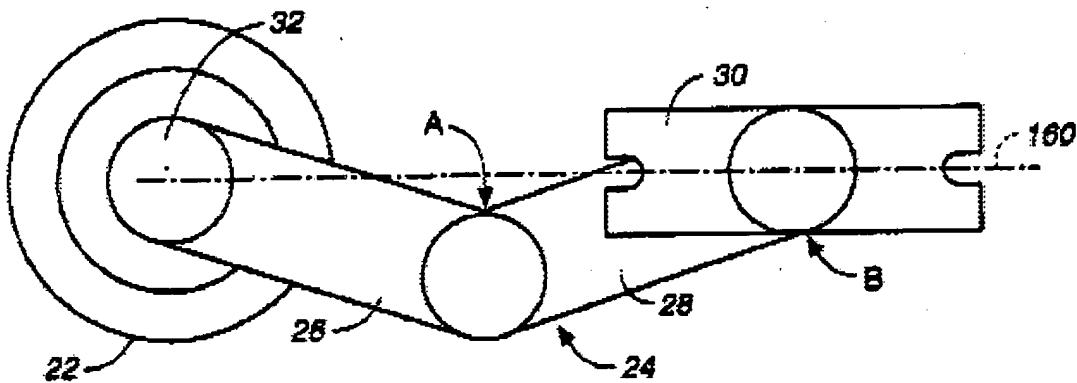
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1,2,6-8,10,11,15-23, and 25-27 are rejected under 35 U.S.C.102 (b) as being clearly anticipated by Solomon, U.S. Patent No. 6, 428,266. Solomon (266) discloses the following;

(a) A robot 20 that includes a base 22 with an attached movable arm 24. The arm 24 includes a lower arm link 26, an upper arm link 28, and a hand or end effector 30. The lower arm link 26 is connected to the base 22 at a rotatable shoulder 32; the upper arm link 28 is connected to the lower arm link 26 by a rotatable elbow 34; and the end effector 30 is connected to the forearm 28 by a rotatable wrist 36, as recited in claims 1 and 23. See Column 3, line 20-29; and Figure 1 below;



(b) When the shoulder motor and the elbow motor are driven at the same rate but in opposite directions, several concurrent motions occur. The shoulder joint 22 rotates, so that lower arm link 26 moves counterclockwise into the position shown in FIG. 5. Concurrently, the elbow joint 34 rotates at the same rate but in the reverse direction, i.e., clockwise, so that upper arm link 28 rotates clockwise with respect to lower arm link 26, as recited in claims 1, 2-8, and 23. See Column 5, line 47-54; and Figure 5 below;



**FIG. 5**

(c) Through the use of an external controller such as a microcomputer, the motors operate the arm 24 so that the shoulder joint 32 rotates, or the end effector 30 moves radially inward or outward relative to the shoulder joint 32 and center axis of the robot. In this particular field, only radial movement of the end effector is required; the end effector is always aligned to move along a radius extending from the center of

the robot base to an external work station or other location, as recited in claims 17-23.

See Column 3, line 34-39; and Column 7, line 29-42.

(d) The use of servo motors, as recited in claims 10 and 11. See Column 6, line 1-6.

(e) The use of direct drive motors that include sensing rotational rates with sensors (encoders), and homing flags (sensors) to insure the shoulder motor and the elbow motor are driven at the same rate, as recited in claims 12,13, and 17-19. See Column 5, line 47-54; and Column 7, line 40-42.

It is implied herein that, control of shoulder and elbow motor rates in accordance with Solomon (266) is equivalent to controlling rotational velocity, as recited in claims 12,13, and 17-19.

### ***Claims Rejection – 35 U.S.C. 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3-5, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,428,266 to Solomon, in view of Seraji U.S. Patent No. 5,737,500.

Solomon (266) discloses nearly all the limitations of claims 3-5, and 14 but fails to teach the use of a base translation mechanism and a prismatic joint. However, Seraji (500) discloses a robot arm with a prismatic joint mounted on a mobile platform for translating the base. See Column 19, line 46-56; and Figure 3 below.

Therefore it would have been obvious to one of ordinary skill in the art that the robot apparatus and method of Solomon (266) can be modified to use the mobile platform of Seraji (500), to provide an additional translational degree-of-freedom that can be treated as a prismatic joint. Therefore, the complete manipulator system has eight independent joint degrees-of-freedom with two degrees-of-redundancy.

5. Claims 9 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,428,266 to Solomon, in view of Sieradzki, U.S. Patent Pub. No. 2003/0123958.

Solomon (266) discloses nearly all the limitations of claims 9 and 24 but fails to teach the use of an electrostatic chuck. However, Sieradzki (958) discloses a wafer handling robot having an electrostatic chuck, as recited in claims 9 and 24. See paragraph [0046].

Therefore it would have been obvious to one of ordinary skill in the art that the robot apparatus and method of Solomon (266) can be modified to use the electrostatic chuck of Sieradzki (958), to provide a chuck that applies a clamping voltage to ensure secure clamping of the wafer, so as to traverse the wafer through a ribbon-shaped or scanned ion beam to accomplish uniform ion implantation.

***Conclusion***

6. Any inquiry concerning this communication or earlier communications should be directed to Phillip Johnston whose telephone number is (571) 272-2475. The examiner can normally be reached on Monday-Friday from 7:30 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiners supervisor John Lee can be reached at (571) 272-2477. The fax phone number for the organization where the application or proceeding is assigned is 703 872 9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PJ

June 23, 2005

  
JOHN R. LEE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800